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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/759,305

01/20/2004

Hsin-Cheng Lin

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05/16/2006

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EXAMINER

AFZALI, SARANG

ART UNIT

PAPER NUMBER

3729

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/759,305

Applicant(s)

LIN ET AL.

Examiner

Sarang Afzali

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/20/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because on line 15, "from" should read - - form - -.

Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bleckmann (EP0041653) in view of Applicant 's Admitted Prior Art (AAPA).

Regarding claim 1, Bleckmann teaches a process of making a heat exchanger comprising the steps of:

- a) providing a plurality of grooves (2, Fig. 1) provided in a recess formed on a radiator (support sheet 1, Fig. 1);
- b) positioning heat-receiving ends of a plurality of heat-transfer tubes (tubes 3) in said grooves (2, Fig. 1);
- c) positioning a heat-transfer plate (5, Fig. 1) in front of said recess on said radiator (1, Fig. 1); and

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d) applying downward pressure on said heat-transfer plate (5, Figs. 2 & 3) with a heated flat pressure plate (not shown), so as to press said heat-transfer plate into said recess and accordingly, flatten the heat-transfer plate, making said flattened heat-transfer tubes have increased contact areas with said radiator.

Note that the Examiner construes the teaching of Bleckmann of at least one groove (2) (Abstract, line 2) to mean there may be a plurality of grooves (23, Fig. 13) and therefore, there are also a plurality of heat-transfer tubes (3). Furthermore, Bleckmann teaches that the heat-transfer plate (5, Figs. 2 & 3) is pressed with a sufficient force into the recess formed on the radiator (1, Fig. 3) such that it flattens the ends of the heat-transfer tubes (3, Fig. 3) and further increases the contact areas with the radiator (1) through the contact of heat-transfer plate (5, Fig. 3) with the top of the radiator (1, Fig. 3).

Bleckmann teaches the invention cited with the exception of explicitly teaching the solid-state paste tin.

However, AAPA (Specification, page 2, lines 10-13) teaches that it is well known in the art to apply and heat a paste tin between the heat-transfer tubes and the radiator to minimize the clearance therebetween and thereby increase the overall radiating efficiency.

It would have been obvious to one of ordinary skill in the art at the time of invention to have provided Bleckmann with the step of applying a paste tin as taught by AAPA, as an effective way of increasing overall radiating efficiency.

Regarding claim 3, Bleckmann as modified by AAPA teaches the invention cited with the exception of explicitly teaching the copper material used for the flat pressure plate.

However, the Examiner takes Official Notice that it is well known in the art to use copper as a material for a plate used for both applying pressure and supplying heat to a workpiece considering copper's excellent and proven heat-transfer capability and characteristics.

It would have been obvious to one of ordinary skill in the art at the time of invention to have formed the flat pressure plate of Bleckmann of copper material to provide the plate with those desired characteristics.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bleckmann (EP0041653) in view of Applicant 's Admitted Prior Art (AAPA) and further in view of Prasher et al. (US 6,661,660).

Bleckmann as modified by AAPA teaches the invention cited with the exception of explicitly teaching the copper material used for the heat-transfer plate.

However, Prasher et al. teach a method of making heat dissipating device wherein a substantially flat plate (618, Fig. 7) is driven to apply a downward pressure (616, Fig. 7) to a heat-transfer plate (608, Fig. 7) to thermally couple the heat pipe (606, Fig. 7) and the radiator member (628, Fig. 7) to a heat generating item (602, Fig. 7) and substrate (640, Fig. 7). Prasher further teaches that the heat-transfer plate (608, Fig. 7) is made of copper (col. 7, lines 8-9).

It would have been obvious to one of ordinary skill in the art at the time of invention to have modified Bleckmann/AAPA with the step of using copper as the material for the heat-transfer plate, as taught by Prasher et al., to provide an effective means of providing an assembled heat exchanger with excellent and effective heat-transfer capabilities.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

EP0157370 teaches a method of making a heat exchanger wherein a plurality of heat pipes (3, Figs. 1 and 6) are placed and flattened in a plurality of grooves (21, Figs. 1 and 2) in a heat exchanger body (2, Figs. 1 and 3) by applying a vertically downward pressure using a plate (10, Fig. 3) and further teaches that copper among other materials is used as the components of the heat exchanger (page 6, lines 29-30).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarang Afzali whose telephone number is 571-272-8412. The examiner can normally be reached on 7:00-3:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S.A.

SA

5/11/2006

A handwritten signature in black ink, appearing to read "David P. Bryant", written in a cursive style.

David P. Bryant
Primary Examiner